

## **ABSTRACT OF THE DISCLOSURE**

**[072]** The invention is a photonic home area network for interfacing an external communications data network with a plurality of buildings, residential or commercial, in a neighborhood. The network also includes a wide-signal bandwidth multi-access channel comprising a plurality of units each including a first circuit adapted to receive photonic signals representative of a transmittable signal; and a second circuit adapted to transmit multiplexed photonic signals representative of a multiplexed data signal, wherein the units are operably coupled to a third circuit and a subsequent set of the units, wherein such coupling provides a ring network configuration.